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# DR. CRAWFORD W. LONG, DISCOVERER OF ANESTHESIA

BY ROSA PENDLETON CHILES

*Mem. Aug. 1911*

AT the last meeting of the British Medical Association, held in London in July, 1910, the subject of anesthesia received more than ordinary attention.

There were several reasons for this. One was the fact that the Pathological Museum was replaced by the Medical Museum—a change which permitted the display of anesthetic apparatus, and other exhibits on the subject of anesthesia, which had not been possible in a museum given to pathology. The family of the late Dr. Crawford Williamson Long, of Georgia, had been invited to exhibit his original papers, determining his claim to the discovery of anesthesia. The invitation was accepted, and Dr. Long's papers received conspicuous place in the museum.

As the original proofs of no other claimant were solicited, this may be regarded as an acknowledgment upon the part of Great Britain that Dr. Long was the discoverer of anesthesia. Indeed, the English have acknowledged this for years. Dr. George Foy, F.R.C.S., F.R.A.M., of Dublin, Ireland, author of "Anesthetics, Ancient and Modern," and other valuable contributions to medical history, has earnestly declared his opinion on this subject in a biographical sketch of Dr. Long, in which he memorializes him as the discoverer of general anesthesia. In a letter to Dr. Long's daughter, dated March 26, 1910, Dr. Foy writes:

Of one great fact I am sure, to wit: the principal anesthetists of London recognize that your father's claim to the discovery of general anesthesia is well founded. And in their hospital classes they so inform their students. No writing or talking can now affect his position. It has been accepted, and is acknowledged by writers and teachers.

When the late King Edward awakened from his etherized slumber, after his opera-

tion for perityphlitis, one of the first questions he asked was:

"Who discovered anesthesia?"

"Dr. Crawford Long, your majesty," was the reply.

When the king showed further interest in the matter, Dr. Foy presented him with a copy of his biography of Dr. Long, which his majesty subsequently acknowledged in an autograph letter.

"Vaccination and anesthesia," wrote Dr. J. Marion Sims, one of the most distinguished contributors to the advancement of medicine and surgery, "are the greatest boons ever conferred by science on humanity. England gave us one, America the other. England recognized the labors of Jenner; America should recognize the labors of Long."

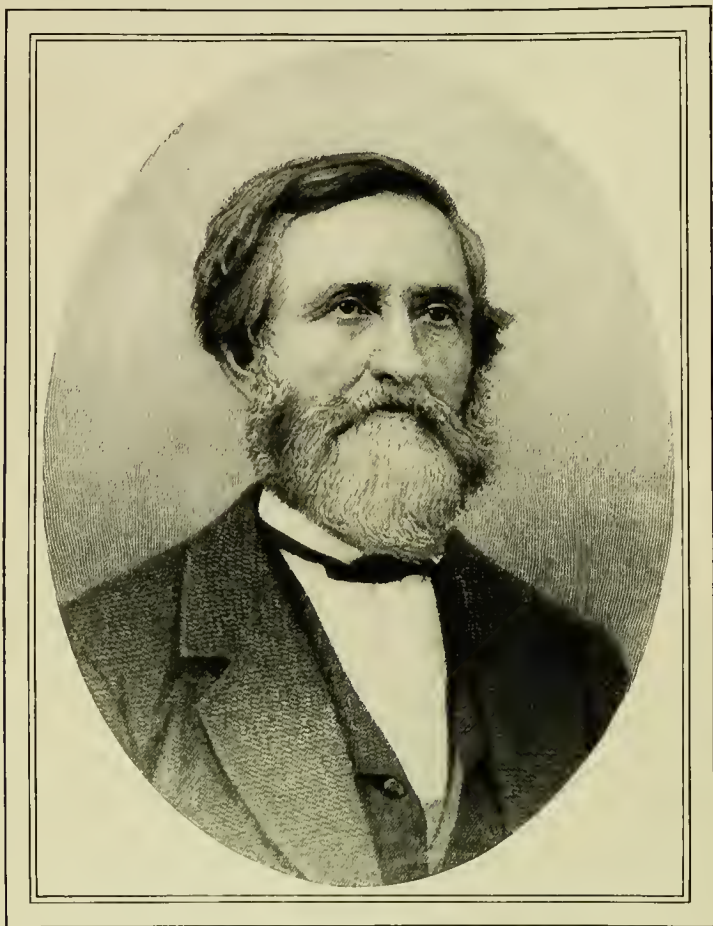
If we compare these two benefactions of Jenner and Long, it is difficult to decide which has done more for the relief of mankind. Primarily, vaccination, as affording protection from smallpox, is of less importance than anesthesia, especially at the present time, when sanitation has become a science, and the danger of smallpox is minimized by common measures of preventing disease. On the other hand, the widening scope of surgery makes its handmaid, anesthesia, increasingly useful.

Comparison of secondary benefits is more difficult. Vaccination furnished suggestion to Pasteur and others for the study of serum therapy, and the principle evolved from it has become one of the greatest in medical history. Anesthesia has also transcended the limits of its original purpose—to render suffering mortals oblivious to the torturing cruelty of the knife—and has multiplied the possibilities of surgery. Its use in experiments upon animals has done invaluable service in the war against disease.

Dr. Foy, placing the discovery of anesthesia far above Jenner's work with vaccine, says that it ranks second only to Harvey's discovery of the circulation of the blood. Yet, if we compare the rewards of

tion that arises is—what constituted that discovery?

Not the idea of anesthesia. That has been in the minds of men almost as long as the idea of pain itself. It was apparently



CRAWFORD WILLIAMSON LONG, THE GEORGIA PHYSICIAN WHO FIRST USED ETHER TO PRODUCE ANESTHESIA DURING A SURGICAL OPERATION

*From a photograph taken near the end of Dr. Long's life*

the two men, Jenner far outranks Long. In his case, although there were other claimants before Parliament, the British legislators unanimously voted to reward Jenner, and he received thirty thousand pounds from the public purse. On the other hand, America, as a nation, did not even bestow a medal upon Long.

#### THE DISCOVERY OF ANESTHESIA

In considering the conflicting claims to the discovery of anesthesia, the first ques-

tion in the mind of the old Hebrew chronicler who wrote of the "deep sleep" which the Creator caused to fall upon Adam. The Assyrians are said to have compressed the carotid arteries to produce insensibility to pain. The Egyptians used Indian hemp and the product of the poppy for the same purpose. Homer wrote of the "sorrow-easing-drug," nepenthe. Pliny the Younger, Galen, and others, described the ability of mandragora to paralyze sensation. An old Chinese manuscript states that a phy-



sician named Hoa-tho, in the third century, employed a preparation of hemp to produce a measure of unconsciousness under surgery.

The "sleeping sponge" was used in the fifteenth century; a sixteenth-century manuscript mentions something similar, and Shakespeare wrote of "drowsy syrups." Later, toward the end of the eighteenth century, Priestley made discoveries regarding the properties of gases, and their power of producing insensibility was discussed. In 1800, Sir Humphry Davy discovered that nitrous oxide gas causes unconsciousness, and suggested its use in surgery, but his suggestion went unheeded.

In 1818, Faraday announced the anesthetic effects of sulfuric ether, and the American physicians Godman (1822), Jackson (1833), Wood, and Bache (1834) confirmed his report. But all such observations were considered "scientific curiosities," and the world was almost as ignorant of the nature, possibilities, and practical demonstration of anesthesia in 1842, when Dr. Long started a new era in surgery, as it was in the days of Adam.

At that time the following points were entirely unknown:

1—To what degree insensibility can be carried with safety.

2—The certainty with which ether, or any other gas, can be used to produce insensibility, and the general effect upon the immediate and later condition of the patient.

3—The possibilities of long-continued anesthesia in surgery.

The elucidation of these three vital points may be said to have constituted the discovery of anesthesia.

Having determined what the discovery was, the next consideration is Dr. Long's claim to it.

In case of such a discovery, the rules of his profession require a physician to establish his claim as the discoverer by independent verification; to use his discovery for the benefit of his patients as soon as he is satisfied of safety in its employment; and, at such time as he is assured by exhaustive demonstration of the safety with which less experienced operators may use it, to give it to the profession as a whole.

As an illustration of a physician's duty in regard to this last requirement, the case of Dr. Ehrlich, in his recent discovery of a new preparation of arsenic, may be cited.

He had treated seven thousand cases successfully with this compound, but upon being asked when he would give his formula to the world, he replied:

"Not until I have received reports of twenty or thirty thousand injections."

Such exhaustive test is not required in the case of every new process, but in a matter as important as anesthesia, with the danger attendant upon its use, a reasonable time should certainly have been given the discoverer for extensive experiment before publishing his results. Yet the only thing that has cheated Dr. Long of many of the honors due him was the criticism, in the days of the so-called "ether controversy," that he did not give his work to the profession early enough.

#### DR. LONG'S EARLIEST EXPERIMENTS

During all of his course as a medical student in the University of Pennsylvania, Dr. Long was eager to find something that would alleviate pain in surgery, and believed that somewhere in the universe the Creator had placed an agency sufficient for the need. In those days he was fond of experiment, and was recognized as a man of independent thought. It was, however, by accident that he finally found the agent for producing oblivion to pain. His genius lay in applying the accident to the need which appealed to his sympathies, and experiment quickly followed.

In the first half of the last century, sulfuric ether was used in New England, and in certain sections of the South, to furnish the principal entertainment at private social gatherings. These curious affairs were called "ether frolics." Young people inhaled the gas for its properties as an excitant, and the strange antics of those under its influence caused merriment for the rest of the party.

Dr. Long, when he was about twenty-six years old, inhaled it with other young people, and at times became uncontrollable under its influence, falling over objects and bruising himself quite badly. Feeling no pain at the time, and being unconscious of injury until afterward, it occurred to him that the safe agency for painless surgery had been found. After considering the matter carefully, on the 30th of March, 1842, he successfully performed the first authenticated operation without pain to the subject. This fact has never been disputed.

James M. Venable, a young man who

had inhaled ether at "ether frolics," consented to have a tumor removed while under the influence of the gas. He had postponed the operation from time to time in dread of pain, and was glad to try the new agency of oblivion. He was so amazed at the success of the experiment that upon recovering consciousness he refused to believe that the tumor had been removed until Dr. Long showed it to him. Two months later the same man had another tumor removed with equal success.

There were four witnesses of the first operation, and all of them bore testimony to its complete success. They were young men studying in Dr. Long's office, and their evidence as to the experiments conducted by the Georgia physician is proof of his earnest study of the subject. The preceptor and his pupils, behind closed doors, anesthetized one another time and again to make sure of the process and its results.

It may be worth while to reprint the bill which Dr. Long rendered to Venable, as copied from the physician's books:

JAMES VENABLE TO DR. C. W. LONG, Dr.  
1842

|  |      |
|--|------|
| January 28. Sulfuric ether.....          | 25   |
| March 30. Ether and exsecting tumor..... | 2 00 |
| May 13. Sulfuric ether.....              | 25   |
| June 6. Exsecting tumor.....             | 2 00 |

It has been stated that Dr. Long abandoned the use of anesthesia in surgery after his first success with it, but the affidavits of those who were associated with him, and who knew his work, disprove the charge. Living in a small town, with most of his practise in the country, his surgical cases were not numerous, but whenever ether was applicable, and the patients consented to its use, he employed it.

Dr. J. F. Groves, who began the study of medicine under Dr. Long in 1842, states that, "owing to the prejudice and ignorance of the populace, Dr. Long was prevented from using ether as often as he might have."

This would have been the experience of any physician in the early use of a new and supposedly mysterious agency.

From the first, Dr. Long offered his discovery to the doctors of his section, and urged them to adopt it. They were afraid of fatal results, however, and in only one case was it used—in 1844, when Dr. J. B. Carlton, of Athens, Georgia, one of the most prominent physicians of the State, extracted

a tooth while the patient was insensible from ether-inhalation. That the physicians who knew of his work would finally have employed anesthesia, however, as Dr. Long's successes were multiplied, may be judged from a statement of Dr. Carlton, in which he says that while assisting Dr. R. D. Moore, another physician of Athens, in amputating the leg of a colored boy, Dr. Moore expressed regret that he did not bring sulfuric ether along, so that he "could try Dr. Long's great discovery."

As further evidence of the fact that Dr. Long's use of anesthesia in surgery was well known and often discussed, Dr. Ange Delaperriere made the following affidavit in 1854:

I, Ange Delaperriere, M.D., do certify that I resided in Jefferson, Jackson County, Georgia, in the year 1842, and that some time in that year I heard James M. Venable, then of said State and county, now deceased, speak of Dr. C. W. Long, then of Jefferson, in the county of Jackson, Georgia, now of Athens, Georgia, cutting two tumors from his neck while under the influence of the inhalation of sulfuric ether without pain or being conscious of the performance of the operation.

I do further certify that the fact of Dr. C. W. Long using sulfuric ether by inhalation to prevent pain in surgical operations was frequently spoken of and notorious in the county of Jackson, State of Georgia, in the year 1842.

It is plain, then, that Dr. Long met the requirements of his profession. He had discovered general anesthesia, made repeated experiments to determine its effects, demonstrated it openly, employed it in all cases in which it was possible for him to employ it, and made an earnest effort to persuade other physicians to use it. He had achieved one of the greatest triumphs in the history of medicine—the victory over pain. The world should find it easy, then, to forgive his one mistake of withholding his discovery from the profession at large longer than proved, later, to be best for his own interests.

He had good reason for waiting. He had been in practise, exclusive of hospital work, less than a year. What would his discovery mean to the body of senior physicians in the great world outside of Georgia? How presumptuous his claim! Twenty-six years old, and a discoverer! He knew that such new departures, even when announced by much older physicians, were often regarded as erratic, and that important suggestions were often unheeded, as in the case of Sir Humphry Davy.

The first case that came under his care where its use was applicable after my going ~~into~~ into his office was not till January 8<sup>th</sup> 1845 which was the case of a negro boy having two fingers to amputate, caused by a neglected burn. I as the only student, still, with the Doctor he had me to accompany him to see the operation and assist in the administration of the ether. The first finger was removed while under the influence of ether, the little fellow wincing no pain, the second without ether, the child suffered extremely.

At the request of Mrs. Frances Long Taylor I have prepared the above statement of facts in regard to her father's discovery of anaesthesia. All of which I certify to be true to the best of my recollection.

The above and foregoing statements were sworn to and subscribed before me

J. F. Groves M. D.

Dec. 15<sup>th</sup> 1894

Wm. H. Wilson C. P. & J. P.

FACSIMILE OF PART OF AFFIDAVIT BY DR. GROVES, WHO WAS ONE OF DR. CRAWFORD W. LONG'S ASSISTANTS

According to Dr. Long's own statement, the disfavor with which the medical profession regarded mesmerism in surgery influenced his delay to some extent, but the chief deterrent was his desire to furnish exhaustive proofs of the reality, safety, and efficiency of anesthesia, and to ascertain whether the constitutional differences of individuals might necessitate changes in its administration. His opportunities for such study were not large, and especially were cases of capital surgery rare in his practise. By his own declaration, Dr. Long was waiting to report on major operations.

It must not be forgotten that the young

Georgia doctor was a hundred and thirty miles from a railroad, with but meager mail facilities, with no hospital in which to make his demonstrations, and no press-agents at his back. As a distinguished physician has said, "Dr. Long's failure was one of environment, and not of intention"; but the postponement of a published account of his work was well-nigh fatal to his interests.

#### THE "ETHER CONTROVERSY"

About two years after the modest South-erner had begun his experiments, others, to whom his work was unknown, began investigations of a similar nature. An energetic



trio in New England were aiming at the same general object—to establish the effectiveness of a state of unconsciousness in surgery produced by the inhalation of gas.

In 1844, Horace Wells, a dentist of Hartford, Connecticut, heard a wandering lecturer, C. Q. Colton, lecture on nitrous oxide, and saw him administer the gas. A gentleman who had inhaled it fell, and sustained a slight injury, of which he manifested no consciousness at the time.

This circumstance gave Wells a valuable suggestion. As early as 1840 he had conceived the idea that nitrous oxide gas might be used to lessen pain in the extraction of teeth, but he did not use it. If he had done so, the history of anesthesia might have been written differently. After the incident in 1844, however, Wells courageously had the gas administered to himself, and had a sound molar extracted, experiencing no pain.

He then used nitrous oxide in his practise, and in the next year he went to Boston to introduce his discovery to the world, but his first public demonstration was not a success. The failure produced severe nervous shock, resulting in serious illness. In the following year he went to Paris, to place his claims before the French Institute, only to find that other claimants had preceded him.

Dr. William T. G. Morton, a dentist of Boston, had been Wells's partner before the latter's experiments with nitrous oxide gas, and knew something of his work. He doubted the entire efficiency of nitrous oxide, however, and sought another agency. In 1846, when he was studying medicine with Dr. Charles T. Jackson, a distinguished physician and chemist, and was living in Jackson's home, the latter suggested to him the anesthetic properties of ether, which Morton tried successfully. Shortly afterward he etherized a patient in the Massachusetts General Hospital, and Dr. John C. Warren, a prominent Boston surgeon, removed a tumor from the man's neck—an operation which recalls that performed by Dr. Long on Venable four years earlier.

Then followed the great controversy for first honors in the discovery and demonstration of anesthesia. Jackson claimed not only that he suggested the use of ether to Morton, but that he had conceived its anesthetic properties some years before. A war of pamphlets followed. Morton and Jackson succeeded in obtaining recognition by the

French Academy and a joint patent right from the United States government; but Morton afterward controlled the patent, with a concession to Jackson.

Later, an effort made made by both to secure from the government a grant of a hundred thousand dollars in recognition of the discovery. This was combated by the friends of Wells, then dead, and later by the New York Medical Association. The war was waged for five years before Dr. Long, who disliked controversy and did not care to strive after honors, could be persuaded to take part in it. Finally, upon the urgent insistence of his friends, he wrote to Senator Dawson, of Georgia, who had charge of the bill in the Senate, after its passage by the lower House, giving an account of his work, similar to the account he had given several years earlier to the Medical Society of Georgia.

Senator Dawson requested Dr. Jackson to investigate Dr. Long's claim, which Jackson did, visiting Dr. Long at his home. After this Jackson, although he was so deeply interested personally, wrote to Senator Dawson that he was convinced of the justice of Dr. Long's claim. When this was stated before the Senate, it proved a death-blow to the bill to reward Jackson and Morton.

The strife continued, but Dr. Long took no further part in it. He was almost forgotten by the world, which had constantly before it the lifelong contest of the other claimants. However, in 1877, Dr. J. Marion Sims espoused his cause, and wrote an able argument in his defense. Dr. Sims went abroad shortly after this, and the next year Dr. Long died, so the matter again dropped out of the public eye. Now, after sixty years, the name of the modest Southerner is receiving the honor that is unquestionably its due.

Last year the Medical Society of Georgia erected a monument to Dr. Long. The infirmary at the University of Georgia is also a memorial to him, but the highest honor thus far accorded him has been his selection by unanimous vote of the Georgia Legislature for a place in Statuary Hall, in Washington. His statue, with one of Alexander Stevens, Dr. Long's roommate in college and intimate friend through life, will be in the Capitol within two years, I am told.

Reverting to the "ether controversy," the publication of the discovery to the world



came finally from the distinguished surgeons Warren, Haywood, and Bigelow. Upon this ground not one of the claimants could assert priority, for none of them published a line about anesthesia until after Warren, Haywood, and Bigelow had made their announcement.

#### LONG'S CAREER AND PERSONALITY

In considering Dr. Long's achievement, a little space should be given to the man himself. He was of excellent descent. His paternal grandfather, an immigrant who settled at Carlisle, Pennsylvania, rendered distinguished service during the Revolutionary War, and was one of Lafayette's officers at Yorktown. A little later, heading a Scottish-Irish colony, he moved to Georgia, where his son, James Long, the father of the discoverer of anesthesia, became widely known as a man of light and leading. He was a philanthropist and a politician, deeply learned in the principles of law and jurisprudence, and the friend and closest adviser of William H. Crawford, successively United States Senator, Secretary of War, Secretary of the Treasury, minister to France, and candidate for the Presidency. Dr. Long was named after Crawford.

Crawford Long graduated at nineteen, second in a large class. He then made his way—on horseback for most of the distance—to the University of Pennsylvania, where he made a brilliant record in the study of his profession. He next went to New York for hospital practise. After this he was advised to enter the navy as a surgeon, but preferred to go back to his native State, where he began practise in the obscure village of Jefferson.

Last year, at the unveiling of the monument to Dr. Long, Dr. Woods Hutchinson said of the discoverer of anesthesia:

In many matters he was ahead of his day and generation. He was one of the first to hold the belief that tuberculosis is curable, and that fresh air and diet will effect cures of this dread malady. He was one of the first to discover that the bilious fever of the South is a form of malarial fever, and that quinin is its specific remedy. He was among the first to treat typhoid patients in almost the identical way in which the physicians of to-day handle that disease. He was fifty years ahead of the record in the removal of a cancer by the now well-known Holstead operation.

A more intimate touch is given by Dr. A. A. Lipscomb, president of Franklin Col-

lege, now the University of Georgia, who knew him well:

The man and the physician were united in singular closeness in the character of Dr. Long. The truthful emotions, the unhurried painstaking, that cautiously wrought out its conclusion; the resolute patience, that kept his judgment suspended until all the facts were noted and analyzed; the prompt and courageous vigor with which he acted when his mind was made up; the composure of his mien; the watchful solicitude, begotten of anxiety of heart for his patients; the beneficence so responsive to the wants of the poor; and the deep tenderness toward womankind in the sorrows of life—all these were conspicuous in his whole life. These qualities were inherent in him, and diffused themselves as a subtle aroma about his person. Such a life naturally commanded the respect and admiration of all classes.

To the writer, nothing bespeaks more the moderation of the man, his modesty, his consideration of others, and his high sense of professional ethics, than his letter to Dr. Jackson, mentioned above as one of the claimants to the discovery of anesthesia:

I design to prepare an article with the proofs of the priority of my claims of the discovery of the anesthetic powers of ether and of its applicability to surgical operations. I design to have this published in pamphlet form for distribution among the members of the medical profession, and I expect to present such proof with the article as will satisfy all that I am entitled to all I claim.

Ours are rival claims, and permit me, sir, to say that although our claims are conflicting, I would not knowingly say anything in the article which would be displeasing to you. I entertain high respect for you as a gentleman and man of science, and feel honored by your acquaintance.

Still it becomes each one of us to use all honorable means to advance his own claims, and I know you will not blame me for attending to this matter, which so much concerns my reputation.

Shall it meet with your approbation, I may refer to your admissions to Hon. W. C. Dawson and myself of the belief of the correctness of my claims. I will, however, make no allusion to your letter to Mr. Dawson, or to the conversation held with myself, unless it meets with your sanction.

It is a strange fact that all of the contestants in the controversy over the discovery of anesthesia died in a dramatic way, but Dr. Long's end came as he had always desired it, and the last circumstance of his life was not the least to mark his greatness.

Wells, a sensitive man, was so overcome by the rejection of his claims by the French Academy that he lost mental poise and committed suicide in 1848.

Morton died in 1868, from congestion of the brain induced by excitement over an article seeking to deprive him of his honors.

Jackson, like Wells, became insane from the bitter contention over the disputed honors, and died in an asylum in 1880.

Long, in the fulness of service, was stricken with apoplexy at the bedside of

a woman patient. His first words upon recovering consciousness were:

"How is she?" His last conscious utterance embodied directions for his patient's comfort. Such was the splendid close of a noble, unselfish life, in which not even the dark shadow of death could cause forgetfulness of duty.

## THE CLOUD-MEN

BEING A FOREPRINT FROM THE LONDON NEWS SHEET OF  
MARCH 9, 1915

BY OWEN OLIVER

AUTHOR OF "JUDGMENT," "THE ANNIHILATOR," ETC.

### GOVERNMENT NOTICES

THIS newspaper is published under the authority of the News Act, 1915, which directs the printing of a single newspaper in the United Kingdom. Under the provisions of the act, the paper will be exclusively devoted to the plain statement, without colorable matter, of important events, and to articles useful to the community.

It is provided by Section 3 of the act that the communication of false news is punishable as follows:

First offense—two years' penal labor.

Second offense—five years' penal labor.

Third offense—death.

Readers are reminded that the Unprofitable Employments Act has been repealed only to the extent indicated above. The writing or perusal of fiction, therefore, remains a penal offense.

The census of the United Kingdom, taken under the Act for the Settlement of the Population, has been completed, with the following results:

|  |        |
|--|--------|
| Males, total.....                      | 51,504 |
| Males, unmarried (age 20 to 60).....   | 9,212  |
| Females, total.....                    | 52,214 |
| Females, unmarried (age 18 to 50)..... | 8,901  |

Under Section 2 of the act, persons between the ages specified who have not arranged marriages by April 1 next will be paired by the local committees appointed under the act.

A list of the centers selected for the concentration of the inhabitants of this country is published on page 4. The inclusion of Edinburgh and Dublin is provisional only, and depends upon sufficient persons desiring to reside in those cities.

Choice of residence in the selected centers can be allowed only so far as is compatible with the public welfare. For instance, the necessity of a coal supply will require a certain population for Newcastle. Forms of choice will be distributed during the week.

The consultative committee of the governments of Europe, North America, and Japan has decided that the capital penalty must be enforced for the second offense of wilful idleness, as, in the present crisis, this despicable crime threatens the continued existence of the human race.

### LOCAL GOVERNMENT OF LONDON—NOTICES

The weekly train for the North will start at 10.15 on Saturdays in future. Free passes may be obtained at the council offices, on good reason for the journey being shown.

Persons taking possession of vacant houses should affix a notice to the front door, stating that they are in occupation. Otherwise the houses will be liable to be reappropriated.

In consequence of the universal disarmament, a large number of naval and military uniforms are available for conversion into workmen's clothing. Applications should be made at the office of the clothing committee.

A *crèche* has been opened in the building in Whitehall formerly known as the War Office.

### EDITORIAL NOTICES

We desire to publish articles describing the experiences of any persons who came into close contact with the so-called Cloud-Men. Photographs will be especially welcome.

Accession no.

H. C.

Author

Chiles, R.P.

Crawford W.

Call no. Long

ANESTHESIA

II. 5

